PRACTICAL ARITHMETIC

PART II.

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PRACTICAL

ARITHMETIC

FOR THE

COMMON SCHOOLS OF NORTH AMERICA.

PART SECOND.

DENOMINATE NUMBERS AND FIRST EXERCISES IN FRACTIONS.

By

H. DUEMLING, Phil. D.

13th Edition.

ST. LOUIS, MO.:
CONCORDIA PUBLISHING HOUSE.
1886.

PREFACE.

In the present edition this book appears in a form so materially altered, as to make a word of explanation necessary. Partly to reduce, as seemed to be enjoined, the material, partly to exclude from the already overburdened course of instruction denominate values not employed in practical life, a number of tables not only were excluded wholly, but single values also were here and there omitted from the tables retained. By this it became practicable to enlarge what has been retained and to add to this book a brief introduction into fractions, which is to prepare for the more comprehensive treatment of them in book 3. In particulars also, I hope, the amending hand will be discerned.

To my worthy colleagues, who have assisted me in the remodeling of the book, I hereby extend my most heartfelt thanks.

Ft. Wayne, May, 1885.

H. Duemling.

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I. UNITED STATES MONEY.

I. Numeration and Notation.

Read:

1. $3; $27; $305; $20020; $507009.
2. $ .5; $ .8; $ .1; $ .9; $ .3.
3. $5.2; $68.3; $127.9; $1005.1.
4. $ .05; $ .09; $ .04; $ .01; $ .07.
5. $5.23; $67.83; $137.29; $10.87.
6. $ .003; $ .005; $ .009; $ .001.
7. $2.375; $7.293; $125.623.

2559106

8. $ .23; $ .57; $ .90; $ .70; $ .25.

9. $7.052; $10015.902; $325.00.

10. $ .073; $15.003; $ .508.

11. $705.827; $5007.93; $ .672.

12. $8.744; $ .85; $10050.923.

Write in figures:

1. Five dollars; twenty-three dollars, three thousand and fifty-four dollars.

2. Seventy dollars; forty-two dollars; four thousand and one dollar.

3. Three dimes; seven dimes; nine dimes; four dimes.

4. Eight dollars four dimes; forty dollars six dimes.

5. Two cents; five cents; eight cents; one cent.

6. Seventy-three dollars two dimes four cents.

7. Five thousand seven hundred and five dollars four dimes nine cents.

8. Four mills; six mills; nine mills; two mills.

9. Five dollars eight dimes seven cents three mills.

10. Ten thousand and fifty dollars two dimes nine cents two mills.

11. Twenty-five cents; forty-four cents; eighty-one cents.

12. Twenty cents; seventy cents; ninety cents.

13. 2 dollars 47 cents 7 mills.

14. 92 dollars 83 cents 4 mills.

15. 105 dollars 5 cents 2 mills.

16. 19 dollars 14 cents.

17. 1 dollar 3 cents.

18. 302 dollars 30 cents 5 mills.

19. 27 cents 5 mills.

20. 9 cents 2 mills.

21. 5 dollars 4 mills.

22. 20 dollars 7 mills.

II. Reduction.

a. *From a higher to a lower denomination.*

Reduce to ct.:

1. $5; $8; $30; $89; $212; $1000.
2. $7.57; $32.04; $20.35; $125.70.

Reduce to m.:

3. 5, 9, 36, 87, 126, 7056 ct.
4. 8 ct. 3 m.; 10 ct. 7 m.; 48 ct. 6 m.; 97 ct. 5 m.
5. $ .23; $ .05; $ .485; $ .902; $ .037.
6. $7; $25; $203; $1008; $517.
7. $5.06; $23.75; $5.732; $67.509.

b. *From a lower to a higher denomination.*

Reduce to ct.:

8. 20, 30, 90, 120, 360, 7270 m.

Reduce to ct. and m.:

9. 12, 34, 97, 114, 317, 4725 m.

Reduce to $:

10. 300, 700, 2500, 37200 ct.

Reduce to $ and ct.:

11. 157, 507, 1297, 63752 ct.

Reduce to $, ct. and m.:

12. 2715, 3057, 5002, 67589 m.

III. Addition.

Add:

1. $5.26, $27.327, $129.02, $57.20.
2. $135.07, $38.526, $1.32, $9.007.
3. $5.03, $125.027, $50, $102.53.
4. $1275, $3.72, $ .52, $90.235.
5. $2.35, $ .725, $652.38, $ .52.

6. 32 ct., 7 m., 48 ct., $4, 9 m.

7. $8, 53 ct., 9 m., $23.47, 5 m.

8. 62 ct., 2 ct., $2, 3 m., $5.07.

9.

$ 8.54
49.93
107.04
86.42
6734.00
87.24
192.36
50.00
9.45
.87

10.

$ 543.07
.893
19.56
8.992
4911.673
9.541
.007
432.65
98.721
5.63

11.

$8432.17
65.009
.05
9.85
6795.198
84.97
611.23
4923.795
.006
784.653

12. A sold B 1 sack of coffee for $15.75, 1 ham for $3.50, 1 firkin of butter for $8.60. What was the amount of the bill?

13. A farmer bought a cow for $35, a horse for $105, a harness for $22.65, and a wagon for $92.47. What was the cost of all?

14. A boy bought 5 oranges for 25 ct., 1 pencil for 10 ct., 1 slate for 20 ct. How much did the boy spend?

15. A owes C $360.37, D $1250, E $52.30, F $69.52. How much does he owe in all?

16. I bought 2 lb. of coffee for 48 ct., 3 lb. of sugar for 30 ct., 6 lb. of salt for 6 ct., 4 lb. of starch for 39 ct. How much did I spend in all?

17. A woman paid $2.50 for 5 yd. of flannel, $1.25 for 15 yd. of calico, 22 ct. for lining, 16 ct. for thread, 15 ct. for buttons. What did she pay for all?

18. A bought a coat for $15.50, a vest for $5.35, a pair of pantaloons for $8.75. What was the cost of the whole suit?

IV. Subtraction.

1. \$35—\$17.
2. 58 ct.—29 ct.
3. 8 m.—3 m.
4. \$42.53—\$31.18.
5. \$126.27—\$69.89.
6. \$257.839—\$26.592.
7. \$53.852—\$7.59.
8. \$23.75—\$7.893.
9. \$57.30—\$9.862.
10. \$5.72—\$ .36.
11. \$13.15—\$ .45.
12. \$2—\$ .35.
13. \$12—\$ .489.
14. \$10—\$ .052.
15. \$2000—\$9.899.
16. \$100—\$89.989.

17. A man bought 1 sack of coffee for \$18.50; after paying \$12.75, what was due?

18. A bought a house for \$1250; how much did he gain, selling it for \$1310.25?

19. A merchant paid \$12.57 for lemons, and, some spoiling, sold them for \$7.89. How much did he lose?

20. A owed me \$253.53, and paid \$198.47. What sum is still due?

21. A farmer having purchased two horses worth \$242.50, was able to pay but \$198.75. What sum does he owe?

22. A man bought two stoves, one for \$25.50 and another for \$28.75. What sum is due after he has paid \$32?

23. R having bought a house for \$2050, pays \$775.50 at the time of the purchase and \$522.75 at another time. What sum is still due?

24. S having purchased a lot for \$375.90, built a house on it for \$1297.37 and a barn for \$487.57. How much will he gain, if he sell the entire property for \$2350?

25. A having borrowed \$120.50 and \$37.65, pays \$62.37 at one time and \$75.22 at another. What is the amount he still owes?

V. Multiplication.

1. $5 \times \$7$.
2. $23 \times \$84$.
3. 35×13 ct.
4. 147×8 m.
5. 17×89 ct.
6. 238×63 ct.
7. $8 \times \$2.35$.
8. $5 \times \$83.75$.
9. $9 \times \$16.857$.
10. $48 \times \$56.20$.
11. $436 \times \$637.52$.
12. $521 \times \$68.432$.
13. $450 \times \$65.93$.
14. $8273 \times \$112.451$.
15. $6 \times \$ .32$.
16. $127 \times \$ .05$.
17. $13 \times \$ .507$.
18. $735 \times \$ .008$.
19. $539 \times \$5.003$.
20. $8007 \times \$14.306$.

What is the cost of:

21. 13 yd. of calico @ 12 ct.?
22. 45 yd. of cloth @ $3.25?
23. 20 lb. of sugar @ 12 ct.?
24. 48 lb. of coffee @ 27 ct.?
25. 9 T. of hay @ $12.25?
26. 75 C. of wood @ $6.37?
27. 637 lb. of cheese @ 12 ct.?
28. 34 bu. of potatoes @ 95 ct.?
29. 252 sheep @ $3.62?
30. 57 lb. of butter @ 26 ct.?
31. 63 gal. of wine @ $1.60?
32. 6 T. of coal @ $5.75?
33. 27 lb. of rice @ $.065?
34. 5 oz. of quinine @ $2.275?
35. 245 lb. of flour @ $.03?
36. 48 bu. of wheat @ $1.025?
37. 103 lb. of meat @ $ .09?
38. 162 A. @ $96.50?

39. A man bought 3 firkins of butter. What is the amount of the bill, if each firkin contain 56 lb. of butter @ $ .24?

40. What will be the cost of 5 sacks of rye, each containing 3 bu., at $ .95 a bu.?

41. What will be the cost of 6 bbl. of pork, each containing 200 lb., @ 5 ct. 6 m.?

42. What is the cost of 6 cheeses, each weighing 24 lb., if 13 ct. be paid per lb.?

43. What will 8000 ft. of lumber cost, if 1000 ft. cost $15.65?

44. What will 30000 ft. of board cost, if 1000 ft. cost $8.25?

45.

St. Louis, March 30, 1885.

Mr. M. Meyer,

Bought of R. L. Schultz.

Jan.	*5*	*6 yd. Cloth . . at $3.25*		
March	*20*	*8 yd. Lining at $ .08*		

Received Payment

R. L. Schultz.

46.

Milwaukee, October 7, 1885.

Mr. M. S. Bond,

Bought of J. N. McCulloch.

Sept.	*7*	*6 T. Hard Coal at $6.75*		
		4 C. Wood . . . at $5.00		

Received Payment

J. N. McCulloch.

47. Chicago, Dec. 5th, 1885.

Mr. J. S. SCHWARTZ,

Bought of S. L. BRANDER.

Nov.	3	7 lb. Butter . . .	@ $ .27	
"	7	2 lb. Sugar . . .	.09	
"	9	20 lb. Flour . . .	.02	
"	14	3 lb. Prunes . . .	.16	
"	17	20 lb. Salt . . .	.01	
		Received Payment, S. L. BRANDER.		

48. New York, March 5th, 1884.

Mr. J. S. SMITH,

Bought of P. D. SANDS.

Febr'y.	2	12 lb. Coffee . . .	@ $ .18	
"	5	20 lb. Sugar . . .	.08	
"	9	2 lb. Tea	1.30	
"	11	5 lb. Cheese . . .	.14	
"	15	3 lb. Chocolate . .	.35	
		Received Payment, P. D. SANDS.		

49.

20 yd. Linen	@ $ .75
16 lb. Feathers	1.12
10 yd. Calico	.08
6 yd. Cloth	1.50
9 yd. Muslin	.12

50.

8 Wooden Chairs	@ $ .6
6 Cane-seat Chairs	1.1
2 Bedsteads	3.7
3 Rocking Chairs	3.7
2 Tables	4.2

51.

25 lb. Beef	@ $ .13
14 lb. Mutton	.10
35 lb. Veal	.12
3 Hams, 31 lb.,	.16
27 lb. Pork	.12

VI. Division.

1. 8 m. ÷ 4.
2. 84 ct. ÷ 6.
3. $240 ÷ 8.
4. $1008 ÷ 12.
5. $6.15 ÷ 5.
6. $37.05 ÷ 3.
7. $49.84 ÷ 7.
8. $127.08 ÷ 9.
9. $5.92 ÷ 8.
10. $ .54 ÷ 6.
11. $ .162 ÷ 3.
12. $ .056 ÷ 4.
13. $414 ÷ 23.
14. $745 ÷ 149.
15. $8.04 ÷ 12.
16. $5.55 ÷ 15.
17. $8.37 ÷ 31.
18. $672.10 ÷ 47.
19. $124.41 ÷ 87.
20. $8.975 ÷ 25.
21. $183.58 ÷ 274.
22. $1132.30 ÷ 845.
23. $5 ÷ 4.
24. $12 ÷ 5.
25. $30 ÷ 8.
26. $18 ÷ 12.
27. $76 ÷ 16.
28. $6 ÷ 75.

How many times

29. 2 ct. in $1?
30. 4 ct. in $1?
31. 20 ct. in $1?
32. 25 ct. in $1?
33. 50 ct. in $3?
34. 75 ct. in $6?
35. 35 ct. in $168?
36. 3 ct. in $6.54?
37. 8 ct. in $42.88?
38. 17 ct. in $66.30?
39. $12.36 in $49.44?
40. $23.57 in $329.98?
41. 2 m. in $1?
42. 25 m. in $1?
43. 4 m. in $6?
44. 20 m. in $7?
45. 8 m. in $2.344?
46. 9 m. in $57.78?
47. $2.572 in $154.32?
48. $3.137 in $250.96?
49. $1.562 in $23.43?
50. $3.256 in $55.352?

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51. 7 lb. of coffee cost $1.61. What will 1 lb. cost?
52. 27 lb. of cheese cost $3.51. What will 1 lb. cost?
53. A bought 23 T. of hay for $258.75. What did 1 T. cost?

54. How much does each of 5 poor persons receive, if \$7 be divided among them?

55. A man bought 10 boxes of raisins, each containing 25 lb., for \$55. What did he pay per lb.?

56. L bought a farm containing 235 A. for \$6932.50. What did 1 A. cost?

57. How many poor persons will receive money, if \$1.23 are to be distributed at the rate of 3 cts. for each person?

58. How many lb. of sugar can be bought for \$4.48, if 1 lb. cost 7 ct.?

59. How many bu. of wheat can be bought for \$46.25, if 1 bu. cost \$1.25?

60. How many bbl. of flour can you buy for \$333.25, if 1 bbl. cost \$7.75?

61. How many yd. of cloth can you buy for \$176.40, if 1 yd. cost \$3.60?

62. A farmer brought 15 bu. of wheat worth \$1.12 per bu. to the city and took in payment for it linen @ 40 ct. a yd. How much linen did he get for his wheat?

VII. Promiscuous Examples.

1. \$5.23 — \$ .79 + \$854.30.

2. \$2000 — \$98.99 + \$ .005 — \$237.929.

3. 18 × \$ .003 + \$17.25 — \$ .989.

4. 23 × \$472.68 — \$1417 + \$362.85.

5. \$9275.61 ÷ 3 — \$857.03 + \$8.17 — \$17.09.

6. \$2609.25 ÷ 49 + \$792.38 — \$81.73 — \$ .99.

7. 147 × \$237.40 ÷ 6 — \$4756.138 + \$1407.037.

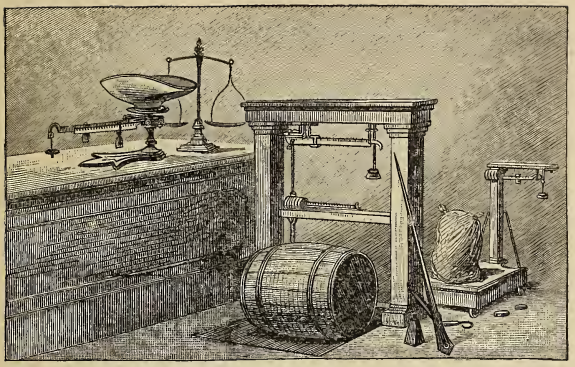
8. \$1000 ÷ 64 + \$85 — \$94.275 — \$ .939 + \$17.26.

9. How many times are 2 m. contained in \$10101.01?

10. \$1000000 — \$ .009 — \$999.998 — \$989.099.

11. \$3819.36 ÷ 438 — \$4 — \$ .927 + \$14.32.

12. 792 × \$843.55 ÷ 45 — \$927.034 + \$ .273.



II. AVOIRDUPOIS WEIGHT.

I. Reduction.

a. *From a higher to a lower denomination.*

Reduce to cwt.:

1. 2, 5, 9, 15, 37, 86, 143, 257 T.

Reduce to lb.:

2. 3, 9, 17, 532 cwt.
3. 2, 31, 83 T.
4. 5 T. 11 cwt.
5. 3 T. 12 cwt.
6. 8 T. 9 cwt. 27 lb.
7. 2 T. 13 cwt. 89 lb.
8. 43 T. 10 cwt. 17 lb.
9. 12 T. 19 lb.
10. 27 T. 74 lb.

Reduce to oz.:

11. 4, 7, 11, 29, 625 lb.
12. 3 cwt. 10 lb.
13. 17 cwt. 2 lb.
14. 13 T. 2 cwt.

15. 2 T. 15 cwt. 21 lb. 14 oz.

16. 1 T. 7 lb. 6 oz. **17.** 3 T. 11 oz.

Reduce to dr.:

18. 6, 8, 12, 48, 517 oz. **19.** 7 lb. 12 oz.

20. 43 lb. 11 oz. **21.** 2 cwt. 7 lb.

22. 3 T. 7 cwt. **23.** 1 T. 1 cwt. 1 lb.

24. 15 T. 16 cwt. 11 lb. 7 oz. 12 dr.

25. 8 cwt. 12 oz. 9 dr. **26.** 1 T. 1 lb. 1 dr.

b. *From a lower to a higher denomination.*

Reduce to oz.:

27. 32, 48, 80, 224, 624, 4192 dr.

Reduce to oz. and dr.:

28. 18, 87, 437, 847, 9269 dr.

Reduce to lb.:

29. 32, 64, 112, 640, 720, 3408 oz.

Reduce to lb. and oz.:

30. 19, 43, 117, 537, 8911 oz.

Reduce to cwt.:

31. 200, 800, 9000, 8700, 5300 lb.

Reduce to cwt. and lb.:

32. 817, 520, 8731, 9856, 1237 lb.

Reduce to T.:

33. 40, 80, 120, 860, 4720, 6340 cwt.

Reduce to T. and cwt.:

34. 63, 87, 150, 789, 2517, 1923 cwt.

35. Reduce 2537 lb. to T., cwt. and lb.

36. Reduce 9142 lb. to T., cwt. and lb.

37. Reduce 2317 oz. to cwt., lb. and oz.

38. Reduce 17362 oz. to cwt., lb. and oz.

39. Reduce 37569 dr. to cwt., lb., oz. and dr.

40. Reduce 673275 dr. to T., cwt., lb., oz. and dr.

II. Addition.

Add:

1. 7, 6, 19, 36 dr.
2. 8, 12, 5, 47 oz.
3. 15, 3, 24, 6 lb.
4. 2, 31, 45, 19 lb.
5. 4, 1, 17, 9 cwt.
6. 12, 33, 5706 T.

7.

cwt.	lb.
2	14
12	22
7	87
11	79
5	13

8.

lb.	oz.	dr.
22	7	15
17	11	—
8	—	7
9	12	13
15	9	2

9.

T.	cwt.	lb.	oz.	dr.
215	11	7	12	12
90	2	20	5	9
2007	18	—	2	3
159	—	73	15	11
63795	19	23	4	5

10.

T.	lb.
6	23
17	49
213	84
—	92
7	48
5	79

11.

T.	lb.	dr.
1	89	15
9	—	10
12	72	9
—	14	13
5	—	14
9	—	7

12. A merchant has 4 sacks of coffee. The first weighs 1 cwt. 13 lb., the second 1 cwt. 15 lb., the third 89 lb., the fourth 92 lb. What is the weight of the 4 sacks?

13. A man received 5 cases of goods by rail. The first weighed 3 cwt. 6 lb., the second 2 cwt. 50 lb., the third 97 lb., the fourth 1 cwt. 90 lb., the fifth 79 lb. What was the weight of the whole consignment?

14. A farmer brought six hogs to market. The first weighed 327 lb., the second 510 lb., the third 205 lb., the fourth 217 lb., the fifth weighed as much as the third, the sixth weighed 420 lb. How much did the six hogs weigh?

15. A bought 3 hhd. of sugar. The first weighed 6 cwt. 73 lb., the second weighed 1 cwt. 17 lb. more than the first, and the third 2 cwt. 49 lb. more than the second. How much did the 3 hhd. weigh?

III. Subtraction.

1.

lb.	oz.	dr.
15	13	5
— 7	7	2

2.

cwt.	lb.	oz.
5	2	2
— 2	1	7

3.

T.	cwt.	lb.
125	3	5
— 17	—	18

4.

T.	cwt.	lb.
1023	17	—
— 115	12	9

5.

cwt.	lb.	oz.
7	—	14
— 1	87	15

6.

lb.	oz.	dr.
82	—	—
— 7	11	8

7.

T.	cwt.	lb.	oz.	dr.
9	2	17	6	12
— 7	15	22	7	8

8.

T.	cwt.	dr.
134	12	7
— 19	16	12

9.

T.	lb.	dr.
28	12	8
— 19	44	15

10. 2 cwt. — 67 lb.

11. 5 lb. — 15 dr.

12. 1 T. — 1 oz. 1 dr.

13. 2 cwt. — 25 lb. 6 dr.

14. 1 T. — 1 cwt. 1 lb. 1 oz. 1 dr.

15. A merchant had 9 cwt. of sugar, of which he sold 3 cwt. 43 lb. How much had he left?

16. A merchant received 2 consignments of coffee. The first weighed 1 T. 3 cwt., the second 11 cwt. 44 lb. He sold 1 T. 3 cwt. 20 lb. How much coffee had he left?

17. A had 3 cwt. 93 lb. of tobacco. He sold 1 cwt. 50 lb. and later 84 lb. How much had he left?

IV. Multiplication.

1. 7×6 dr.
2. 8×9 lb.
3. 9×23 cwt.
4. 27×8 dr.
5. 435×23 lb.
6. 8×5 lb. 10 oz.
7. 5×7 cwt. 50 lb.
8. 7×6 oz. 7 dr.
9. 4×23 T. 17 cwt.
10. 42×70 lb. 8 oz.
11. 13×1 T. 2 cwt. 32 lb.
12. 27×5 lb. 11 oz. 3 dr.
13. 9×5 T. 7 cwt. 24 lb. 15 oz. 15 dr.
14. 47×2 T. 11 cwt. 15 lb. 9 oz. 13 dr.
15. 3×7 T. 8 lb.
16. 9×17 lb. 12 dr.
17. 35×2 cwt. 15 oz.
18. 56×3 T. 17 lb.

19. What will 6 barrels of flour weigh, if each barrel weigh 196 lb.?

20. What will 17 bu. of potatoes weigh, if one bu. weigh 60 lb.?

21. A merchant received 53 boxes of soap, each box weighing 45 lb. What was the weight of the consignment?

22. A family consumes 2 lb. 8 oz. of coffee a week. How much does this family consume during a year of 52 weeks?

23. A person smokes 1 oz. 3 dr. of tobacco a day. How much did he smoke during a year of 365 days?

24. A soldier of the army of the U. S. receives per day 1 lb. 6 oz. of bread, 1 lb. 4 oz. of meat, 8 oz. of potatoes, 1 oz. 10 dr. of rice, 1 oz. 10 dr. of coffee and 2 oz. 6 dr. of sugar. How much bread does he receive per week? How

much meat? How much potatoes? How much rice? How much coffee? How much sugar?

25. A merchant receives by rail 235 sacks of coffee weighing 65 lb. per sack; 5 hhd. of syrup @ 7 cwt. How much did the whole consignment weigh?

V. Division.

1. 6 oz. ÷ 3.
2. 28 lb. ÷ 7.
3. 68 T. ÷ 4.
4. 84 lb. ÷ 12.
5. 192 lb. ÷ 24.
6. 16709 T. ÷ 49.
7. 18 cwt. 81 lb. ÷ 9.
8. 16 lb. 2 oz. ÷ 6.
9. 23 oz. 4 dr. ÷ 3.
10. 53 T. 8 cwt. ÷ 12.
11. 10 lb. 15 oz. 5 dr. ÷ 5.
12. 7 T. 2 cwt. 24 lb. ÷ 8.
13. 7 lb. 8 oz. 12 dr. ÷ 14.
14. 2 T. 7 cwt. 50 lb. ÷ 38.
15. 1 T. ÷ 8.
16. 7 cwt. ÷ 10.
17. 12 lb. ÷ 96.
18. 3 T. ÷ 32.
19. 2 T. 14 cwt. ÷ 5.
20. 3 cwt. 7 lb. ÷ 32.
21. 7 cwt. 7 oz. ÷ 28.
22. 5 T. 62 lb. ÷ 8.

How many times

23. 1 lb. in 1 T.?
24. 1 oz. in 1 cwt.?
25. 3 cwt. in 6 T.?
26. 7 dr. in 21 lb.?
27. 4 lb. in 1 cwt. 4 lb.?
28. 5 oz. in 8 lb. 7 oz.?
29. 10 lb. in 2 T. 7 cwt.?
30. 3 dr. in 1 lb. 2 oz.?
31. 12 lb. in 9 T. 96 lb.?
32. 14 oz. in 32 lb. 6 oz.?
33. 48 dr. in 8 cwt. 70 lb.?
34. 84 oz. in 7 T. 49 lb.?
35. 1 lb. 8 oz. in 7 lb. 8 oz.?
36. 3 T. 8 cwt. in 27 T. 4 cwt.?
37. 1 oz. 2 dr. in 13 oz. 8 dr.?
38. 1 cwt. 65 lb. in 1 T. 4 cwt. 75 lb.?

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39. What will 1 hhd. of sugar weigh, if 9 hhd. weigh 8910 lb.?

40. 25 loads of hay weigh 27 T. 10 cwt. What will one load weigh?

41. Four merchants divided equally among them 25 T. 17 cwt. 92 lb. of iron. How much iron did each receive?

42. If you put 10 cwt. 88 lb. 1 oz. of flour into 7 bbl., how much will each bbl. contain?

43. A merchant wishes to put up 9 T. 285 lb. of coffee in bags of which each will hold 53 lb. How many bags will it take?

44. If one bu. of wheat weigh 60 lb., how many bu. and lb. will 1 T. 7 cwt. 38 lb. of wheat make?

45. If one bu. of rye weigh 56 lb., how many bu. and lb. do 3 T. 19 cwt. 82 lb. make?

VI. Promiscuous Examples.

1. 1 cwt. 7 lb. 8 oz. + 9 cwt. 6 lb. 3 oz. — 7 cwt. 39 lb. 6 oz.

2. 9 T. — 2 T. 7 cwt. 48 lb. + 19 cwt. 93 lb.

3. 5 × 6 T. 2 cwt. 6 lb. + 3 cwt. 20 lb.

4. 7 × 8 lb. 3 oz. 11 dr. — 10 lb. 15 dr. + 1 lb. 12 oz. 13 dr.

5. 1 T. 3 cwt. 7 lb. ÷ 16 — 87 lb. 3 oz.

6. 7 lb. 8 oz. ÷ 15 + 23 lb. — 11 oz. 14 dr.

7. 9 × 2 T. 13 cwt. 7 lb. ÷ 12 — 17 cwt. 93 lb. 8 oz. 12 dr.

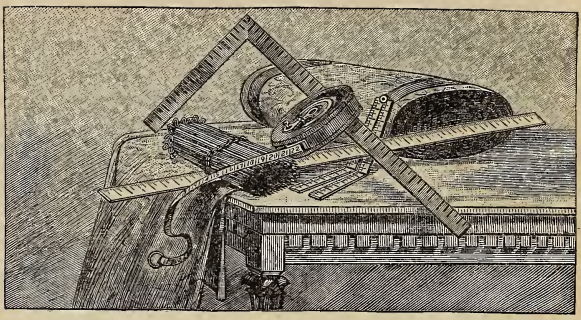
8. 1 T. ÷ 64 + 82 lb. 13 dr. — 15 oz. 15 dr. + 3 T. 19 lb.

9. How many times is 1 dr. contained in 1 T. 1 cwt. 1 lb. 1 oz. 1 dr.?

10. 1 T. — 13 dr. — 12 cwt. 51 lb. — 14 oz. — 5 lb. 8 dr.

11. 1 T. 1 lb. 1 oz. ÷ 8 + 9 cwt. 7 dr. — 57 lb. 12 dr. — 15 oz.

12. 6 cwt. 7 dr. + 1 T. 15 oz. — 89 lb. — 8 cwt. 11 oz. — 15 oz. 15 dr.



III. LONG MEASURE.

I. Reduction.

a. *From a higher to a lower denomination.*

Reduce to fur.:

1. 8, 23, 69, 147, 912, 7028 mi.

Reduce to rd.:

2. 9, 67, 83, 135 fur.

3. 8 mi. 7 fur.; 15 mi. 3 fur.

4. 39 mi. 5 fur. 29 rd.

5. 9 mi. 35 rd.

Reduce to ft.:

6. 6, 8, 19, 200, 347, 5739 yd.

Reduce to in.:

7. 3, 7, 85, 537 ft.

8. 4 yd. 2 ft.; 2 yd. 1 ft.

9. 3 yd. 11 in.

10. 1 yd. 1 ft. 7 in.

b. *From a lower to a higher denomination.*

Reduce to ft. and in.:

11. 24, 36, 27, 84, 97, 143, 252, 1007 in.

Reduce to yd. and ft.:

12. 6, 9, 17, 42, 156, 907, 5632 ft.

Reduce to yd., ft. and in.:

13. 38, 93, 47, 157, 5007, 839 in.

Reduce to fur. and rd.:

14. 57, 80, 263, 1563, 6660 rd.

Reduce to mi. and fur.:

15. 56, 87, 112, 9053, 1107 fur.

Reduce to mi., fur. and rd.:

16. 320, 347, 743, 1517, 507, 37012 rd.

II. Addition.

Add:

1. 3, 9, 11, 23 rd.

2. 7, 6, 11, 10 in.

3. 7, 3, 2, 6 fur.

4. 2, 1, 9, 23 ft.

5.

mi.	fur.	rd.
123	6	29
7	1	25
1005	3	—
	7	37
18	—	15

6.

yd.	ft.	in.
3	2	11
	1	8
14	—	7
3	1	—
	2	6

7. A traveler on the first day of his journey traveled 15 mi. 3 fur., on the second 8 mi. 2 fur. 30 rd., on the third 19 mi. 39 rd. What distance did he travel in these 3 days?

8. 1 yd. 2 ft. of a post supporting a bridge are in the ground, 2 yd. 6 in. in the water, 1 ft. 3 in. above the water. What is the length of the post?

9. A train of cars runs from one station to another in 2 hours. It travels 22 mi. 7 fur. in the first hour, and in the second hour 2 fur. 13 rd. more than in the first. What is the distance from one station to the other?

III. Subtraction.

1.

mi.	fur.	rd.
7	2	23
— 5	3	16

2.

yd.	ft.	in.
12	2	3
— 8	2	7

3.

mi.	fur.	rd.
13	—	7
— 8	7	19

4.

yd.	ft.	in.
8	2	—
— 6	2	5

5. 3 mi. — 18 rd.

6. 5 yd. — 2 ft. 7 in.

7. From a piece of timber 15 ft. 9 in. in length, a carpenter cuts 6 ft. 10 in. How much of the timber is left?

8. A steamer made 13 mi. 5 fur. in an hour, while a sailing vessel made 8 mi. 2 fur. 37 rd. only. How far was the steamer in advance?

9. A traveler is to travel 41 mi. 7 fur. He travels 17 mi. 4 fur. the first day, 18 mi. 27 rd. the second day. What distance has he still to travel?

IV. Multiplication.

1. 53×6 fur.

2. 17×11 in.

3. 8×5 mi. 2 fur.

4. 6×3 yd. 1 ft.

5. 12×2 mi. 35 rd.

6. 38×12 yd. 2 ft. 7 in.

7. A steamboat runs 12 mi. 3 fur. 15 rd. an hour. What distance will it run in 1 day (24 hours)?

8. If 1 board be 10 ft. 6 in. long, how many yd., ft. and in. will 785 boards be?

9. Two pedestrians starting from the same point, walk in opposite directions. One travels 15 mi. 7 fur. 34 rd. a day, the other 17 mi. 5 fur. 12 rd. How far apart will they be in 21 days?

V. Division.

1. 21 mi. ÷ 7. **2.** 36 rd. ÷ 9. **3.** 258 yd. ÷ 6.
4. 989 mi. ÷ 43. **5.** 2392 yd. ÷ 52. **6.** 6 mi. 7 fur. ÷ 5.
7. 31 mi. 3 fur. 8 rd. ÷ 8. **8.** 33 yd. 2 ft. 8 in. ÷ 10.
9. 3 mi. ÷ 16. **10.** 5 yd. ÷ 18.
11. 3 yd. 2 ft. ÷ 12. **12.** 1 mi. ÷ 16.

How many times

13. 1 rd. in 1 mi.? **14.** 1 in. in 1 yd.?
15. 2 rd. in 5 mi.? **16.** 9 in. in 13 yd.?
17. 24 rd. in 3 mi.? **18.** 18 in. in 87 yd.?
19. 5 rd. in 2 mi. 7 fur.? **20.** 3 in. in 1 yd. 2 ft. 3 in.?
21. 1 ft. 2 in. in 3 yd. 1 ft. 6 in.?

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22. What distance must a ship sail per hour in order to make 201 mi. a day?

23. A wishes to travel 662 mi. 5 fur. in 19 days. What distance must he travel per day?

24. If a train of cars run at the rate of 23 mi. 3 fur. 7 rd. per hour, how many hours will it require to run 210 mi. 4 fur. 23 rd.?

VI. Promiscuous Examples.

1. 17 mi. 5 fur. + 6 fur. 17 rd. — 3 mi. 32 rd.
2. 1 mi. — 1 rd. + 7 fur. 19 rd. — 6 fur.
3. 7 yd. 2 ft. 11 in. — 3 yd. 6 in. + 2 ft. — 1 yd. 11 in.
4. 7 × 16 mi. 3 fur. 19 rd. — 48 mi. 27 rd. + 6 fur.
5. 13 × 9 yd. 5 in. — 2 ft. 10 in. + 2 yd. 11 in.
6. 7 mi. 1 rd. ÷ 9 — 2 fur. 12 rd. + 1 mi. 7 fur. 35 rd.
7. 20 yd. 5 in. ÷ 25 + 1 yd. 7 in. — 2 ft. 9 in.
8. How many times is 1 rd. contained in 1 mi. 1 fur. 1 rd.?
9. 1 mi. — 7 fur. 17 rd. + 5 mi. — 2 mi. 38 rd.
10. 17 yd. 2 in. — 2 ft. 7 in. — 11 in. — 2 ft. 9 in.

IV. CLOTH MEASURE.

I. Reduction.

a. *From a higher to a lower denomination.*

Reduce to qr.:

1. 5, 9, 17, 28, 32, 795 yd.
2. 1 yd. 1 qr.
3. 17 yd. 3 qr.
4. 26 yd. 2 qr.
5. 19 yd. 3 qr.

b. *From a lower to a higher denomination.*

Reduce to yd. and qr.:

6. 8, 28, 35, 100, 307, 6756 qr.

II. Addition.

Add:

1. 5, 3, 7, 18 yd.

2. 19, 12, 8, 7 qr.

3.

yd.	qr.
12	2
165	—
1	3
2005	2
	3

4.

yd.	qr.
	3
106	2
14	—
5	1
498	3

5. A bought 3 pieces of linen. The first measures 34 yd. 3 qr., the second 12 yd. 2 qr., the third 17 yd. 2 qr. How many yd. and qr. do the three pieces contain?

6. In making a suit a tailor requires 3 yd. 3 qr. of cloth for a coat, 2 yd. 2 qr. for a pair of pantaloons, 1 yd. 1 qr. for a vest. How much cloth does the whole suit take?

7. A person wishes to carpet two rooms. The smaller room requires 17 yd. 2 qr. of carpeting and the larger requires 3 yd. and 3 qr. more. How much carpeting do both rooms require?

III. Subtraction.

1.

yd.	qr.
17	3
— 6	2

2.

yd.	qr.
15	2
— 8	3

3.

yd.	qr.
25	1
— 7	2

4.

yd.	qr.
125	—
— 63	1

5. 5 yd. — 3 qr.

6. 17 yd. — 1 yd. 3 qr.

7. A woman bought 15 yd. of calico, of which she makes up 9 yd. 2 qr. into a dress and 1 yd. 1 qr. into an apron. How much calico had she left?

8. A sold 13 yd. 3 qr. of a piece of oil-cloth 29 yd. in length. How much had he left?

9. One piece of cloth measures 4 yd. 2 qr. and another 20 yd. 3 qr. How much is the second longer than the first?

IV. Multiplication.

1. 9×3 qr.

2. 29×2 qr.

3. 312×2 qr.

4. 8×6 yd. 1 qr.

5. 16×12 yd. 2 qr.

6. 42×1 yd. 3 qr.

7. How many yd. and qr. are there in 47 pieces of cloth, each piece containing 24 yd. 3 qr.?

8. How much cloth will a tailor need for 7 coats, if he take 3 yd. 1 qr. for each coat?

9. From a piece of cloth containing 23 yd. 2 qr. a tailor cut what was required for 5 vests. How much of the piece had he left, each vest requiring 1 yd. 1 qr.?

V. Division.

1. 27 yd. ÷ 9.
2. 2431 qr. ÷ 13.
3. 96 yd. 1 qr. ÷ 7.
4. 233 yd. 3 qr. ÷ 5.
5. 6 yd. ÷ 8.
6. 15 yd. ÷ 12.
7. 7 yd. 2 qr. ÷ 6.
8. 1472 yd. 3 qr. ÷ 43.

How many times

9. 2 qr. in 2 yd.?
10. 3 qr. in 5 yd. 1 qr.?
11. 10 yd. 3 qr. in 290 yd. 1 qr.?

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12. A merchant had 8 pieces of cloth of equal length, containing 238 yd. What was the length of each piece?

13. How many pieces of cloth, of 3 yd. 2 qr. each, can be cut from a piece 161 yd. long?

14. 6 yd. 1 qr. of cloth were cut from a piece containing 36 yd., and 17 coats made from what remained. How much cloth was there for each coat?

VI. Promiscuous Examples.

1. 7 yd. 3 qr. + 10 yd. 2 qr. — 9 yd. 3 qr.
2. 3 × 2 qr. — 3 qr. + 10 yd. 1 qr. — 5 yd. 3 qr.
3. 19 × 23 yd. 2 qr. — 47 yd. — 3 qr. + 11 yd.
4. 535 yd. 2 qr. ÷ 17 — 4 yd. 3 qr. + 2 qr.
5. How many times is 1 yd. 1 qr. contained in 217 yd. 2 qr.?
6. 3 × 39 yd. 2 qr. — 3 qr. — 5 yd. 3 qr. — 3 qr.

V. LIQUID OR WINE MEASURE.

I. Reduction.

a. *From a higher to a lower denomination.*

Reduce to qt.:

1. 7, 12, 67, 587, 5756 gal. **2.** 5 gal. 3 qt.

Reduce to pt.:

3. 5, 63, 715 qt. **4.** 38 gal. 3 qt.
5. 53 gal. 1 pt. **6.** 17 gal. 3 qt. 1 pt.

Reduce to gi.:

7. 4, 9, 35, 87, 812 pt. **8.** 2 gal. 3 qt. 1 pt.
9. 125 gal. 2 qt. 1 pt. 3 gi. **10.** 92 gal. 1 gi.
11. 51 gal. 1 pt. 2 gi.

b. *From a lower to a higher denomination.*

Reduce to pt. and gi.:

12. 5, 12, 84, 137, 416, 7806 gi.

Reduce to qt. and pt.:

13. 4, 18, 43, 264, 812, 6757 pt.

Reduce to gal. and qt.:

14. 8, 28, 111, 657, 904, 8946 qt.

Reduce to gal., qt., pt and gi.:

15. 54, 69, 103, 319, 1008, 56717 gi.

II. Addition.

Add:

1. 3, 7, 9, 6 qt.

2. 8, 2, 7, 4 gi.

3. 17, 9, 2, 3 gi.

4. 2, 3, 1, 5 pt.

5.

gal.	qt.	pt.
27	3	1
8	—	—
6	2	1
19	1	1
128	3	—

6.

gal.	qt.	pt.	gi.
23	2	1	3
5	—	1	2
19	3	—	3
74	1	1	1
	3	—	3

7.

gal.	qt.	pt.	gi.
51	3	1	3
12	2	—	2
47	3	1	1
59	2	—	—
17	1	1	1

8.

gal.	qt.	pt.	gi.
104	2	—	3
84	1	1	2
—	—	1	—
537	3	—	3
119	1	1	2

9. A person has 2 casks of vinegar. The one contains 9 gal. 2 qt., the other 8 gal. 1 pt. How much vinegar has he?

10. A person fills two jugs with cider. Into one he empties 1 gal. 2 qt., into the other 2 gal. 1 pt. How much cider does he empty into both jugs?

11. A liquor-dealer bought 3 casks of wine. The first contained 42 gal. 2 qt., the second 25 gal. 1 qt. 1 pt., the third 37 gal. 2 qt. How much wine did the 3 casks contain?

12. I have 2 casks, the first containing 25 gal. 3 qt., the other 2 qt. 1 pt. more than the first. How much does the second cask contain, and what is the capacity of both casks?

13. 54 gal. and 61 gal. 2 qt. were emptied into a wine cask. 15 gal. 3 qt. 1 pt. are still required to fill the cask. What is the capacity of the cask?

III. Subtraction.

1.

gal.	qt.	pt.
23	2	1
— 17	3	1

2.

qt.	pt.	gi.
3	1	2
— 1	1	3

3.

gal.	qt.	pt.
5	—	1
— 4	3	1

4.

qt.	pt.	gi.
2	—	1
— 1	1	2

5.

gal.	qt.	pt.	gi.
34	—	1	2
— 5	3	1	3

6.

gal.	qt.	gi.
63	—	—
— 37	2	1

7. 102 gal. — 57 gal. 2 qt.

8. 3 qt. — 3 gi.

9. 1 gal. — 1 qt. 1 pt. 1 gi.

10. A woman has 2 gal. of vinegar of which she uses 1 gal. 3 gi. How much vinegar remains?

11. From a cask containing 62 gal. 3 qt. 1 pt. of wine 27 gal. 2 qt. were drawn. How much remained?

12. From 60 gal. of wine 15 gal. 1 pt. were taken at one time and subsequently 32 gal. 3 qt. How much wine remained?

13. How much wine must be added to 57 gal. 3 qt. 1 pt. to make 102 gal. 2 qt.?

14. From a keg (8 gal.) of beer 1 gal. 1 qt. were drawn at one time, a second time 3 qt., a third time 1 pt., a fourth time 3 gal. 2 qt. 1 pt. How much remained in the keg?

IV. Multiplication.

1. 5×3 gi.
2. 8×9 qt.
3. 8×73 gal.
4. 128×3 qt.
5. 6×5 gal. 2 qt.
6. 9×7 gal. 3 qt. 1 pt.
7. 57×23 gal. 3 qt. 1 pt. 3 gi.
8. 5×52 gal. 3 qt. 1 pt. 2 gi.
9. 12×7 gal. 1 pt. 2 gi.

10. How many gallons in 7 casks, each cask containing 23 gal. 1 pt.?

11. How much wine in 1 doz. bottles, if each bottle contain 1 pt. 3 gi.?

12. If a family use 2 qt. 1 pt. of milk a day, how much will it use a week? How much a year (365 days)?

13. 1 gal. 2 qt. 1 pt. per day were for 15 days drawn from a cask of alcohol containing 37 gal. 3 qt.; how much was left?

V. Division.

1. 9 gal. $\div 3$.
2. 40 qt. $\div 8$.
3. 210 gal. $\div 15$.
4. 296 gi. $\div 8$.
5. 24 gal. 2 qt. $\div 7$.
6. 1 gal. 3 qt. $\div 4$.
7. 3 qt. 1 pt. 2 gi. $\div 2$.
8. 5 gal. 2 qt. 1 gi. $\div 3$.
9. 1006 gal. 2 qt. 1 pt. 2 gi. $\div 42$.
10. 1 gal. $\div 32$.
11. 3 qt. $\div 24$.
12. 13 gal. 2 qt. $\div 8$.

How many times

13. 1 pt. in 1 gal.?
4. 1 gi. in 1 qt.?
15. 2 gi. in 7 gal.?
16. 3 qt. in 135 gal.?
17. 1 qt. 1 pt. in 21 gal.?
18. 2 gal. 1 qt. in 918 gal.?
19. 1 qt. 2 gi. in 1 gal. 2 qt. 2 gi.?

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20. If a family use 4 gal. 1 qt. 1 pt. of cider per week, what is the quantity used each day?

21. How many quart bottles can be filled from a barrel of beer of 8 gal. 3 qt.?

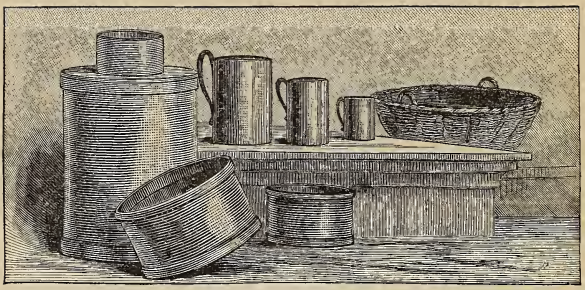
22. If 3 gal. 3 qt. of wine are to be filled into two doz. bottles, how much will each bottle hold?

23. How many casks of 27 gal. 1 pt. will 217 gal. of wine fill?

24. How many days will 5 gal. 1 gi. of milk last a family using 1 pt. 3 gi. a day?

VI. Promiscuous Examples.

1. 23 gal. 2 qt. + 3 qt. 1 pt. — 17 gal. 1 pt. — 3 qt.
2. 1 gal. — 1 pt. + 5 gal. — 3 qt. 1 pt. — 1 qt.
3. 172 gal. 1 pt. — 2 qt. — 5 gal. — 1 pt. — 3 qt.
4. 9 × 2 gal. 1 pt. — 5 gal. 3 qt. + 25 gal. — 7 gal. 1 pt.
5. 27 × 7 gal. 1 pt. + 3 gal. 3 qt. — 17 gal. 1 pt.
6. 48 gal. 1 pt. ÷ 7 — 3 qt. — 5 gal. 1 pt. + 2 qt.
7. 1 gal. 2 qt. ÷ 12 + 2 gal. 3 qt. — 2 qt. 1 pt. + 5 gal.
8. How many times are 1 gal. 1 pt. contained in 3 gal. 1 qt. 1 pt.?



VI. DRY MEASURE.

I. Reduction.

a. *From a higher to a lower denomination.*

Reduce to pk.:

1. 2, 7, 53, 102, 793 bu.

2. 4 bu. 2 pk.

Reduce to qt.:

3. 3, 9, 67, 111, 346 pk.

4. 12 bu. 2 pk. 3 qt.

Reduce to pt.:

5. 8, 11, 42, 82, 517 qt.

6. 3 bu. 2 pk. 3 qt.

7. 32 bu. 2 pk. 5 qt. 1 pt.

8. 114 bu. 5 qt.

9. 89 bu. 1 pt.

b. *From a lower to a higher denomination.*

Reduce to qt. and pt.:

10. 4, 17, 53, 104, 716, 8257 pt.

Reduce to pk. and qt.:

11. 9, 24, 42, 67, 912, 9758 qt.

Reduce to bu. and pk.:

12. 16, 48, 57, 852, 3462 pk.
13. Reduce 1453 qt. to bu., pk. and qt.
14. Reduce 4157 pt. to bu., pk., qt. and pt.
15. Reduce 67853 pt. to bu., pk., qt. and pt.

II. Addition.

Add:

1. 7, 23, 137, 87 bu.
2. 4, 7, 13, 18 pk.
3. 5, 6, 7, 12, 87 qt.
4. 2, 3, 8, 10, 11 pt.

5.

bu.	pk.
27	3
19	2
—	1
34	—
6	2

6.

pk.	qt.	pt.
2	7	1
3	5	—
11	4	1
	2	1
8	6	1

7.

bu.	pk.	qt.	pt.
32	3	5	1
7	2	7	1
28	3	6	—
16	—	4	—
5	1	—	1

8.

bu.	qt.	pt.
17	6	—
—	3	1
48	—	—
63	2	1
1	5	1

9. A family burned 6 bu. 5 qt. of coke in January, 5 bu. 7 qt. in February, 4 bu. 3 qt. in March. How much was burned in the three months?

10. Four baskets of apples measured thus: the first 2 bu. 3 pk., the second 1 bu. 7 qt., the third 1 bu. 2 pk. 5 qt., the fourth 3 pk. 4 qt. 1 pt. How much in all?

11. If a family consume 2 bu. 3 pk. of potatoes in January, 1 bu. 2 pk. 5 qt. in February, 3 bu. 7 qt. 1 pt. in March, what will be the quantity consumed in the three months?

12. A farmer sold to A 13 bu. 3 pk. of wheat, to B 37 bu. 2 pk. 7 qt., to C 78 bu. 1 pk.; after putting aside 4 bu. 2 pk. for his own use, he had 15 bu. 3 pk. left. How large was his crop?

III. Subtraction.

1.

	bu.	pk.
	47	3
—	31	2

2.

	pk.	qt.	pt.
	3	2	1
—	1	7	1

3.

	bu.	pk.	qt.	pt.
	82	2	3	—
—	28	3	7	1

4.

	bu.	qt.	pt.
	6	2	—
—	2	5	1

5. 2 bu. — 3 qt.

6. 1 bu. — 1 pt.

7. 32 bu. — 3 pk. 1 pt.

8. 3 pk. — 7 qt. 1 pt.

9. Bought 40 bu. of coal and burned 21 bu. 3 pk. 5 qt. How much was left?

10. Brought 3 bu. of apples to market and sold them as follows: 2 pk.; 6 qt.; 1 bu. 3 pk. What quantity remained?

11. A having raised 23 bu. 3 pk. of peas, sold 5 bu. 2 pk. 5 qt. at one time, and 12 bu. 7 qt. at another. Find how much he had left.

12. A farmer having raised 130 bu. of wheat, sold 87 bu. 3 pk. and used 20 bu. 2 pk. 7 qt. How much remained?

IV. Multiplication.

1. 3×9 bu.
2. 8×5 pt.
3. 47×5 qt.
4. 18×27 pk.
5. 7×33 bu. 2 pk.
6. 23×7 bu. 3 pk. 5 qt.
7. 9×27 bu. 3 pk. 4 qt. 1 pt.
8. 5×6 bu. 7 qt.
9. How much grain in 7 sacks, each holding 1 bu. 2 pk. 4 qt.?
10. In 5 bbl. of apples, each containing 2 bu. 2 pk., how many bushel and peck?
11. How much corn can be gathered from 27 A., if each A. yield 32 bu. 3 pk. 5 qt.?
12. Find the quantity of apples born by 15 trees, each tree bearing 1 bu. 2 pk. 4 qt.

V. Division.

1. 12 qt. $\div 4$.
2. 117 pt. $\div 9$.
3. 234 qt. $\div 6$.
4. 143 bu. $\div 13$.
5. 7 bu. 2 pk. $\div 6$.
6. 1 pk. 7 qt. $\div 15$.
7. 36 bu. 3 pk. 7 qt. 1 pt. $\div 9$.
8. 9 bu. $\div 18$.
9. 3 pk. $\div 16$.
10. 2 bu. 2 qt. $\div 11$.
11. 1 bu. 1 pt. $\div 13$.

How many times

12. 1 pt. in 1 pk.?
13. 1 qt. in 1 bu.?
14. 8 pt. in 1 bu.?
15. 7 qt. in 28 bu.?
16. 5 qt. 1 pt. in 2 bu. 3 pk.?
17. 1 bu. 1 pt. in 6 bu. 3 qt.?

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18. A family consumes 1 bu. 3 qt. of apples per week. What quantity does it consume per day?

19. If 1 bu. 2 qt. of peas last a family seventeen weeks, what quantity does it use per week?

20. If a person use 22 bu. 3 pk. 4 qt. of potatoes in a year (12 months), how much will he use in a month?

21. A horse consumes 96 bu. 3 pk. 6 qt. 1 pt. of oats in a year (365 da.), what is the average quantity per day?

VII. APPLICATION OF DENOMINATE NUMBERS WITH DECIMAL CURRENCY.

I.

1. 2 T. of coal @ $5.60.
2. 6 yd. of silk @ $2.25.
3. 8 lb. of beef @ 12 ct.
4. 9 bu. of wheat @ 98 ct.
5. 5 bu. of potatoes @ $ .93.
6. 12 gal. of milk @ 18 ct.
7. 7 kegs of beer @ $1.25.
8. 23 T. of hay @ $11.50.
9. 57 lb. of coffee @ 22 ct.
10. 5 oz. of silver @ $2.175.

11. A whale, sixty feet in length, yields 24 T. of blubber and 30 cwt. of whalebone. What is the value of the animal, the blubber selling at $17.63 a ton and the whalebone at $96.00 a hundredweight?

12. Find the wages per week of six men and four boys, each man earning $1.75 per day and each boy 75 ct. less.

II.

1. 3 lb. of coffee cost 48 ct. What is the cost of 1 lb?

2. 7 T. of coal cost $43.40. What is the cost of 1 T.?

3. 35 lb. of butter cost $9.10. What is the cost of 1 lb.?

4. If 17 bu. of potatoes cost $14.62, what is the cost of 1 bu.?

5. If 7 gal. of beer cost $2.80, what is the cost of 1 gal.?

6. If 9 oz. of silver cost $20.43, what is the cost of 1 oz.?

7. If 1 gross (144) of pens cost $2.88, what is the cost of 1 pen?

8. If $40.25 are earned in 23 days, what is the average amount earned per day?

III.

What is the cost

1. Of 6 yd. of calico, at 32 ct. for 4 yd.?
2. Of 9 gal. of vinegar, at $1.20 for 5 gal.?
3. Of 17 lb. of coffee, at 51 ct. for 3 lb.?
4. Of 23 gal. of wine, at $35.25 for 15 gal.?
5. Of 11 oz. of opium, at $7.84 for 7 oz.?
6. Of 90 A., at $776.25 for 45 A.?
7. Of 7 C. of wood, at $118.45 for 23 C.?
8. How much will A. earn in 16 weeks, if he earn $78.00 in 8 weeks?
9. What is the value of 27 bu. of wheat, at $11.16 for 9 bu.?
10. What is the value of 16 quires of paper, at $2.82 for 12 quires?

IV.

Observe: As many dollars per cwt., so many cents per lb.

What is the cost

1. Of 8, 15, 24, 76, 93 lb., at $19 a hundredweight?
2. Of 23 lb., at $3, $5, $8, $17, $43 per hundredweight?
3. Of 27 lb. of cheese, at $15 per cwt.?
4. Of 99 lb., at $36 per cwt.?
5. Of 60 cigars, at $3 a hundred?
6. Of 734 cigars, at $4 a hundred?

Observe: As many cents per lb., so many dollars per cwt.

What is the cost

1. Of 7, 12, 26, 39, 45 cwt., at 12 ct. a pound?
2. Of 5, 7, 11, 43, 87 cwt., at 8 ct. a pound?
3. Of 8 cwt. of tobacco, at 40 ct. per lb.?
4. Of 48 cwt. of sugar, at 9 ct. per lb.?
5. Of 500 cigars, at 2 ct. each?
6. Of 900 cigars, at 5 ct. each?

V.

What is the value of

1. 1 cwt. of coffee, at 27 ct. per lb.?
2. 2 bu. of potatoes, at 12 ct. per pk.?
3. 7 gal. of vinegar, at 8 ct. per qt.?
4. 2 gal. of syrup, at 12 ct. per pt.?
5. 6 T. of hay, at 75 ct. per cwt.?
6. 5 cwt. of iron, at 3 ct. per lb.?

VI.

Find the cost

1. Of 9 lb. of sugar, at 7 ct. for 7 oz.
2. Of 13 gal. of coal oil, at 33 ct. for 3 qt.
3. Of 8 T. of hay, at $1.75 for 5 cwt.
4. Of 37 yd. of cloth, at $2.13 for 3 qr.
5. Of 5 gross (@ 12 doz.) of lead-pencils, at $2.34 for three dozen.
6. A laborer earns $7.50 in 5 days. How much will he earn in 3 weeks, Sundays excluded?

VII.

What is the cost

1. Of 7 bu. 3 pk. of potatoes, if 1 pk. cost 24 ct.?
2. Of 3 cwt. 50 lb. of sugar, if 1 lb. cost 13 ct.?
3. Of 37 gal. 3 qt. of wine, if 3 pt. cost $1.62?
4. Of 6 yd. 3 qr. of silk, if 2 qr. cost 84 ct.?
5. Of 7 T. 2 cwt. of coal, if 5 cwt. cost $1.50?
6. Of 6 bu. 3 pk. of apples, if 4 qt. cost 12 ct.?

VIII.

1. At 40 ct. a gal., what will 1 pt. of vinegar cost?
2. At $12.50 a cwt., what will 1 lb. of sugar cost?
3. If a laborer earn $67.50 per month (30 days), what will he earn per day?

4. At \$3.92 a bbl. (= 196 lb.) what will 13 lb. of rye-flour cost?

5. If a person spend \$8.40 a week, what is the average amount spent per hour?

6. At \$25.80 for 3 T., what will 7 cwt. of hay cost?

7. What will 1 pt. of beer cost, at \$2.56 for 2 kegs (@ 8 gal.)?

IX.

1. What is the value of 1 pt. of vinegar, if 3 gal. 2 qt. 1 pt. cost \$1.45?

2. \$19.08 are paid for 1 cwt. 59 lb. of beef, how much per lb.?

3. What is the price of 1 qr. of silk, if 7 yd. 3 qr. cost \$10.85?

4. If 1 barrel of sugar containing 3 cwt. 69 lb. cost \$55.35, what will 7 lb. cost?

5. At \$3.24 for 13 gal. 2 qt., what is the cost of 3 qt. of milk?

6. At \$2.84 for 17 yd. 3 qr., what will 2 qr. of calico cost?

X.

1. What is the cost of 37 bu. 2 pk. of wheat, at \$1.89 for 1 bu. 3 pk.?

2. What is the cost of 7 gal. 3 qt. of alcohol, at \$2.35 for 2 qt. 1 pt.?

3. What is the cost of 7 T. 19 cwt. of hay, at 72 ct. for 1 cwt. 50 lb.?

4. What is the cost of 27 yd. 3 qr. of muslin, at 40 ct. for 2 yd. 2 qr.?

5. At \$3.02 for 37 mi. 6 fur., what fare must be paid for 1 mi. 3 fur.?

6. Find the value of 3 lb. 9 oz. of coffee, at \$83.28 for 3 cwt. 47 lb.?

XI.

1. At 12 ct. a yard, how much calico can be bought for $5.64?

2. At $1.24 a lb., how much tea can be bought for $55.80?

3. At $7.75 a bbl., how much flour can be bought for $100.75?

4. How many C. of wood can be bought for $50.80, at $6.35 a C.?

5. A bought a farm for $9930. How many acres did the farm contain, A having paid $30 an acre?

6. How many gal. of beer can be bought for $10.40, at 5 ct. a pint?

7. How many T. of hay can be bought for $144, at 60 ct. a cwt.?

8. If 1 cwt. 53 lb. of coffee cost $24.48, how much can be bought for $34.72?

9. How much wine will $256.77 pay for, 117 gal. 3 qt. being sold for $381.51?

Exercise 1.

Compare halves to fourths, sixths, eighths, tenths, twelfths.
Compare thirds to sixths, ninths, twelfths.
Compare fourths to eighths, twelfths.
Compare fifths to tenths.
Compare sixths to twelfths.

Compare fourths to sixths, fourths to tenths, sixths to eighths, sixths to tenths, eighths to tenths, eighths to twelfths, ninths to twelfths, tenths to twelfths.

Exercise 2.

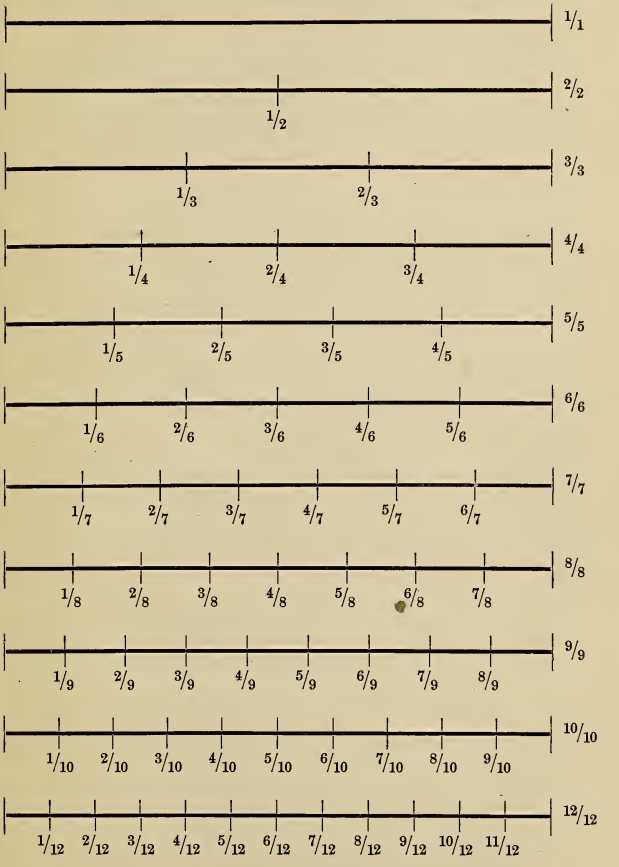
Find equivalent fractions for each of the following:

$1/2$, $1/3$, $1/4$, $1/5$, $1/6$, $2/3$, $2/4$, $3/4$, $2/5$, $3/5$, $4/5$, $2/6$, $3/6$, $4/6$, $5/6$, $2/8$, $3/8$, $4/8$, $6/8$, $3/9$, $6/9$, $2/10$, $4/10$, $5/10$, $6/10$, $8/10$, $2/12$, $3/12$, $4/12$, $6/12$, $8/12$, $10/12$.

Suggestion to Teachers. — The opposite drawing is to illustrate simple fractions and especially to assist the scholar in his studies at home. The teacher will of course make an enlarged blackboard sketch of this drawing and—if at all possible— employ a proper apparatus for the illustration of fractions. The present illustration should not be undervalued and should be sufficiently dwelled upon. Do but desist from theorizing at this grade!

FIRST EXERCISES IN FRACTIONS.

I. Illustration of Fractions.



II. Preparatory Exercises.

1. How many halves in 4, 8, 10, 14, 24, 18, 36, 94?
2. How much is $\frac{1}{3}$ of 6, 9, 15, 39, 42, 54?
3. Find $\frac{1}{4}$ of 8, 12, 24, 40, 112, 408.
4. Divide into 5 equal parts 10, 45, 90, 85, 115.
5. Find the sixth part of 12, 30, 84, 96, 228.
6. What is the seventh part of 14, 28, 35, 105, 210?
7. How much is $\frac{1}{8}$ of 16, 40, 56, 80, 168?
8. Find $\frac{1}{9}$ of 27, 45, 54, 63, 216.
9. Divide into 10 equal parts 10, 50, 120, 570.
10. Find the twelfth part of 24, 36, 72, 108, 144.
11. 100 cents in a dollar. How many cents in $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$ of a dollar?
12. 12 in. make 1 ft. How many in. in $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{6}$, $\frac{1}{12}$ foot?
13. 4 qt. make a gal. How many qt. in $\frac{1}{2}$ gal.?
14. How many qt. in $\frac{1}{2}$ bu.?
15. How many in. in $\frac{1}{3}$ yd.? $\frac{1}{4}$ yd.? $\frac{1}{6}$ yd.? $\frac{1}{9}$ yd.? $\frac{1}{12}$ yd.?
16. How many dr. in $\frac{1}{4}$ lb.? $\frac{1}{8}$ lb.? $\frac{1}{2}$ lb.?
17. A year has 52 weeks. How many weeks in $\frac{1}{2}$ year?
18. If it take 1 man 28 hours to cut up a pile of wood, how many hours will it take 4 men?

---

1. How much is $\frac{2}{3}$ of 15, 24, 36, 72, 114?
2. How much is $\frac{2}{4}$, $\frac{3}{4}$ of 8, 16, 84, 104, 360?
3. Find $\frac{2}{5}$, $\frac{3}{5}$, $\frac{4}{5}$ of 45, 80, 25, 100.
4. Name every sixth part of 24, 42, 60, 114.
5. Find every seventh part of 35, 91, 105.
6. How much is $\frac{3}{8}$ of 24; $\frac{5}{8}$ of 40; $\frac{7}{8}$ of 120?
7. Find every ninth part of 72.
8. How much is $\frac{6}{10}$ of 120, $\frac{9}{12}$ of 120, $\frac{3}{4}$ of 120?

9. How many cents in $^2/_4$, $^3/_4$, $^2/_5$, $^3/_5$, $^4/_5$, $^2/_{10}$, $^3/_{10}$, $^4/_{10}$, $^8/_{10}$, $^9/_{10}$ of a dollar?

10. How many inches in $^2/_3$, $^2/_4$, $^3/_4$, $^2/_6$, $^5/_6$ of a foot?

11. How many oz. in $^3/_4$, $^2/_8$, $^3/_8$, $^5/_8$, $^7/_8$ of a lb.?

12. How many in. in $^2/_3$, $^3/_4$, $^5/_6$, $^4/_9$, $^7/_{12}$ of a yd.?

13. How many pt. in $^7/_8$, $^3/_4$, $^5/_8$ of a gal.?

14. How many pt. in $^3/_4$, $^3/_8$, $^7/_8$ of a bu.?

15. Paid $^2/_3$ of a debt of $42. What is the amount paid?

16. 84 trees are placed in 7 rows, each row containing the same number of trees. How many of them in 1 row? In 4 rows?

17. A cistern is filled to $^7/_9$ of its capacity, which is 144 bbl. How many bbl. will it take to fill the cistern completely?

18. 24 loads of manure are to be spread on 3 acres, $^3/_8$ of the loads on the first, $^2/_6$ on the second, and the remainder on the third. How many loads to each acre?

---

1. Find what part 2 is of 4, 8, 18, 24, 36, 102.

2. Find what part 3 is of 9, 12, 27, 81, 102.

3. Find what part 4 is of 12, 16; 5 of 20, 35; 6 of 18, 54; 7 of 14, 84; 8 of 24, 104; 9 of 27, 81; 10 of 10, 100; 12 of 36, 108.

4. A ditch is to be dug 140 ft. in length. What part of the ditch is finished, after 14 ft. are dug?

5. A man drawing $60 salary per month, pays $12 for rent. What part of his salary is this?

6. A person, dying 48 years of age, had passed 12 years of his life in Europe, 8 years in Africa, 6 years in Asia and the rest in America. What part of his life had he passed in Europe? In Africa? In Asia?

---

1. Find one-half of 1, 3, 5, 9, 13, 25, 69, 103.
2. How much is $\frac{1}{3}$ of 2, 4, 8, 17, 85, 91, 104?
3. Divide into four equal parts 2, 3, 7, 21, 67, 69, 517.
4. Find $\frac{1}{5}$ of 1, 3, 4, 9, 17, 46, 104, 213.
5. Find $\frac{1}{6}$ of 2, 5, 8, 32, 47, 944, 100.
6. Find the seventh part of 3, 5, 11, 24, 48, 108.
7. How much is $\frac{1}{8}$ of 5, 7, 19, 86, 134?
8. Find $\frac{1}{9}$ of 4, 8, 29, 31, 43, 169.
9. Divide into 10 equal parts 6, 9, 23, 45, 517.
10. Find the twelfth part of 5, 10, 29, 68, 740.
11. How many cents in $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{7}$, $\frac{1}{8}$, $\frac{1}{9}$, $\frac{1}{12}$ of a dollar?
12. How many cents in a shilling, the latter being the eighth part of a dollar?
13. How many pk. in $\frac{1}{5}$, $\frac{1}{7}$, $\frac{1}{9}$, $\frac{1}{3}$ of a bu.?
14. How many oz. in $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{9}$, $\frac{1}{7}$, $\frac{1}{12}$ of a lb.?
15. How many ft. in $\frac{1}{7}$, $\frac{1}{9}$ of a mi.?
16. How many gi. in $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{7}$, $\frac{1}{9}$ of a gal.?
17. $6 are distributed among five poor persons. How many dollars will each receive?
18. How many pt. of wine will each of 12 sick persons receive, if 1 gal. is divided among them?

III. Reduction.

1. How many halves in 3, 4, 9, 22, 47, 137?
2. How many thirds in 2, 7, 8, 14, 57, 814?
3. How many fourths in 5, 6, 31, 47, 104?
4. How many fifths in 4, 2, 17, 43, 815?
5. How many sixths in 3, 8, 10, 67, 123?
6. How many sevenths in 2, 3, 8, 17, 84?
7. How many eighths in 1, 9, 18, 27, 61?
8. How many ninths in 3, 11, 21, 42?
9. How many tenths in 9, 35, 61, 84?

10. How many twelfths in 12, 17, 32, 75?

11. One shilling is the eighth part of a dollar. How many shillings in \$2, \$3, \$5, \$7?

12. Among how many poor persons can \$17 be distributed, if each person receive \$1/4?

13. How many yd. of calico at \$1/12 a yd. can be bought for \$7?

---

1. Change $1\frac{1}{2}$, $2\frac{1}{2}$, $5\frac{1}{2}$, $7\frac{1}{2}$, $13\frac{1}{2}$ to halves.

2. Change $1\frac{1}{3}$, $2\frac{2}{3}$, $6\frac{1}{3}$, $9\frac{2}{3}$ to thirds.

3. Change $1\frac{3}{4}$, $5\frac{1}{4}$, $7\frac{2}{4}$ to fourths.

4. Change $2\frac{3}{5}$, $9\frac{4}{5}$ to fifths; $8\frac{5}{6}$, $2\frac{4}{6}$ to sixths; $1\frac{6}{7}$, $7\frac{5}{7}$ to sevenths; $8\frac{2}{8}$, $11\frac{1}{8}$ to eighths; $9\frac{2}{9}$, $17\frac{6}{9}$ to ninths; $8\frac{3}{10}$, $17\frac{5}{10}$ to tenths; $10\frac{3}{12}$, $8\frac{11}{12}$ to twelfths.

5. How many half dollars in \$2 1/2, \$5 1/2, \$7 1/2?

6. How many quarters in \$3 3/4, \$9 1/4, \$24 2/4?

---

1. How many units in $\frac{2}{2}$, $\frac{6}{2}$, $\frac{10}{2}$, $\frac{28}{2}$?

2. How many units in $\frac{6}{3}$, $\frac{12}{3}$, $\frac{24}{3}$, $\frac{102}{3}$?

3. How many units in $\frac{12}{4}$, $\frac{44}{4}$, $\frac{10}{5}$, $\frac{45}{5}$, $\frac{12}{6}$, $\frac{30}{6}$, $\frac{49}{7}$, $\frac{81}{9}$, $\frac{100}{10}$, $\frac{36}{12}$, $\frac{60}{12}$, $\frac{104}{8}$?

4. How many dollars in 12 half dollars? In 16 quarters?

5. How many dollars in 8, 16, 40, 64 shillings?

6. A merchant having $\frac{32}{4}$ barrels of flour in paper bags empties them into barrels. How many barrels can he fill?

---

1. Reduce to units and halves $\frac{3}{2}$, $\frac{5}{2}$, $\frac{9}{2}$, $\frac{13}{2}$, $\frac{25}{2}$.

2. Reduce to units and thirds $\frac{7}{3}$, $\frac{11}{3}$, $\frac{19}{3}$, $\frac{25}{3}$.

3. Reduce to units and fourths $\frac{9}{4}$, $\frac{11}{4}$, $\frac{47}{4}$, $\frac{63}{4}$.

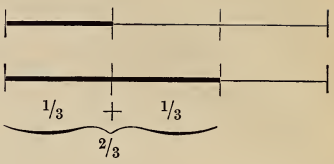
4. Reduce to units and fractions $\frac{9}{5}$, $\frac{11}{6}$, $\frac{12}{7}$, $\frac{19}{8}$, $\frac{13}{5}$, $\frac{13}{12}$, $\frac{47}{10}$, $\frac{21}{9}$, $\frac{34}{6}$, $\frac{100}{12}$.

5. How many dollars and shillings in 9, 12, 23 shillings?

6. How many yd. and qr. in 11, 37, 49 qr.?

IV. Addition.

1. $1/3 + 1/3$.



2. $1/4 + 1/4$.

3. $1/5 + 1/5 + 1/5$.

4. $1/6 + 1/6 + 1/6 + 1/6$.

5. $1/8 + 1/8 + 1/8 + 1/8$.

6. $2/4 + 1/4$.

7. $3/7 + 1/7$.

8. $5/8 + 2/8$.

9. $9/12 + 2/12$.

10. $2/4 + 1/4 + 1/4$.

11. $3/7 + 2/7 + 2/7$.

12. $3/7 + 2/7 + 5/7$.

13. $3/10 + 5/10 + 7/10 + 6/10$.

14. $2/4 + 3/4 + 3/4 + 1/4 + 2/4$.

15. $3/9 + 8/9 + 1/9 + 5/9 + 7/9 + 5/9$.

16. $7/10 + 1/10 + 6/10 + 3/10 + 4/10 + 9/10 + 5/10$.

17. $5/12 + 7/12 + 3/12 + 8/12 + 11/12 + 1/12 + 10/12 + 9/12$.

18. How many cents in $\$1/2$ and $\$1/2$? $\$1/4$ and $\$1/4$? $\$1/4$ and $\$1/4$ and $\$1/4$? $\$1/5$ and $\$2/5$? $\$1/4$ and $\$1/4$ and $\$2/4$? $\$1/10$ and $\$3/10$ and $\$5/10$ and $\$2/10$?

19. How many inches in $1/4$ ft. and $1/4$ ft. and $1/4$ ft? In $1/3$ ft. and $1/3$ ft. and $1/3$ ft.?

20. How many pt. in $1/2$ gal. and $1/2$ gal. and $1/2$ gal.?

---

1. $2\,1/2 + 1/2$.

2. $3\,1/3 + 1/3$.

3. $4\,2/5 + 1/5$.

4. $1\,5/7 + 1/7$.

5. $5\,3/8 + 4/8$.

6. $1\,2/9 + 5/9$.

7. $2\,1/3 + 1\,1/3$.

8. $5\,2/4 + 2\,1/4$.

9. $8\,3/7 + 3\,2/7$.

10. $2\,3/4 + 3/4$.

11. $1\,5/6 + 4/6$.

12. $2\,4/5 + 1\,3/5$.

13. $7\,5/8 + 6\,3/8$.

14. $9\,5/11 + 1\,7/11$.

15. $5\,11/12 + 6\,7/12$.

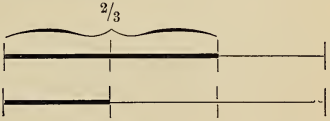
16. A man bought a hat for $2\frac{1}{2}$ and a pair of boots for $3\frac{1}{2}$. How much did he pay for both?

17. A lady bought $7\frac{1}{4}$ yd. of cloth and $6\frac{1}{4}$ yd. of muslin. How much did she buy in all?

18. $10\frac{2}{3}$ lb. of coffee are put into a basket weighing $2\frac{2}{3}$ lb. How much do basket and coffee weigh together?

V. Subtraction.

1. $\frac{2}{3} - \frac{1}{3}$.



2. $\frac{3}{4} - \frac{1}{4}$. **3.** $\frac{5}{6} - \frac{1}{6}$. **4.** $\frac{9}{12} - \frac{1}{12}$.

5. $\frac{4}{5} - \frac{2}{5}$. **6.** $\frac{6}{7} - \frac{4}{7}$. **7.** $\frac{10}{12} - \frac{8}{12}$.

8. $\frac{9}{11} - \frac{5}{11}$. **9.** $\frac{5}{12} - \frac{4}{12}$. **10.** $\frac{8}{9} - \frac{6}{9}$.

11. A boy spent one of three quarters for a slate. How many quarters had he left?

12. A lady having $\$\frac{9}{10}$, pays $\$\frac{2}{10}$ for 2 lb. of meat, and $\$\frac{5}{10}$ for 3 lb. of coffee. How much money has she left?

---

1. $1 - \frac{1}{2}$. **2.** $3 - \frac{1}{3}$. **3.** $5 - \frac{1}{4}$.

4. $6 - \frac{1}{6}$. **5.** $8 - \frac{1}{10}$. **6.** $7 - \frac{1}{12}$.

7. $1 - \frac{2}{3}$. **8.** $2 - \frac{3}{4}$. **9.** $5 - \frac{4}{5}$.

10. $3 - \frac{5}{6}$. **11.** $10 - \frac{3}{10}$. **12.** $1 - \frac{8}{9}$.

13. $5 - 2\frac{1}{2}$. **14.** $8 - 3\frac{1}{4}$. **15.** $10 - 8\frac{1}{3}$.

16. $8 - 3\frac{2}{3}$. **17.** $9 - 5\frac{3}{4}$. **18.** $5 - 4\frac{10}{12}$.

19. What part of an apple will a boy have left after eating one third?

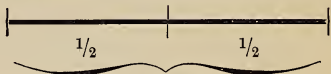
20. A lady makes up $9\frac{1}{4}$ yd. of 12 yd. of calico into a dress. How much remains?

21. A person having $4, spends $2 1/4. How many cents are left?

22. How many pt. of coal oil are left from 1 gal., 1/8 having been filled into a lamp?

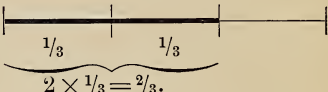
VI. Multiplication.

1. $2 \times 1/2$.



2. $3 \times 1/3$. **3.** $4 \times 1/4$. **4.** $5 \times 1/5$.
5. $8 \times 1/8$. **6.** $10 \times 1/10$. **7.** $12 \times 1/12$.

8. $2 \times 1/3$.



9. $3 \times 1/4$. **10.** $5 \times 1/7$. **11.** $8 \times 1/12$.
12. $2 \times 2/5$. **13.** $3 \times 2/7$. **14.** $5 \times 2/11$.
15. $2 \times 2/3$. **16.** $3 \times 3/4$. **17.** $5 \times 2/8$.
18. $9 \times 5/6$. **19.** $12 \times 3/8$. **20.** $7 \times 5/6$.
21. $11 \times 5/9$. **22.** $13 \times 2/3$. **23.** $9 \times 10/12$.

Find the cost in dollars of

24. 3 lb. of coffee @ $1/4. **25.** 2 lb. of beef @ $1/10.
26. 4 gal. of vinegar @ $1/5. **27.** 7 yd. of calico @ $1/10.
28. 10 lb. of prunes @ $1/4. **29.** 12 gal. of syrup @ $3/5.
30. 1/2 T. of coal @ $7. **31.** 1/4 yd. of silk @ $2.
32. 3/4 T. of hay @ $7. **33.** 3/4 bar. of apples @ $3.

34—43. Find the cost of the above articles in examples 24 to 33 in cents or dollars and cents.

1. $2 \times 1\frac{1}{2}$. **2.** $3 \times 2\frac{1}{3}$. **3.** $4 \times 3\frac{1}{4}$.
4. $5 \times 4\frac{1}{5}$. **5.** $2 \times 1\frac{2}{5}$. **6.** $3 \times 5\frac{2}{10}$.
7. $4 \times 8\frac{2}{11}$. **8.** $2 \times 1\frac{2}{3}$. **9.** $3 \times 5\frac{3}{4}$.
10. $9 \times 7\frac{2}{5}$. **11.** $8 \times 6\frac{7}{11}$. **12.** $9 \times 5\frac{11}{12}$.

Find the cost in dollars of

13. 3 hats @ $\$2\frac{1}{2}$. **14.** 5 chairs @ $\$1\frac{1}{4}$.
15. 6 T. of hay @ $\$6\frac{1}{2}$. **16.** 3 pair of boots @ $\$4\frac{3}{4}$.
17. 9 T. of coal @ $\$6\frac{4}{5}$. **18.** 12 bar. of flour @ $\$5\frac{3}{4}$.

19—24. Find the cost of the above articles in examples 13 to 18 in dollars and cents.

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1. How much is $\frac{1}{3}$ of 7? How much are $\frac{2}{3}$ of 7?
2. How much are $\frac{2}{3}$ of 4, 8, 17, 26, 100?
3. Find $\frac{2}{4}$, $\frac{3}{4}$ of 5, 11, 23, 45, 105.
4. How much are $\frac{2}{3}$, $\frac{3}{5}$, $\frac{4}{5}$ of 10, 31, 47, 91?
5. Name every fifth part of 14, 23, 87.
6. Find every sixth part of 74, 108, 210.
7. How much are $\frac{3}{8}$ of 17; $\frac{5}{8}$ of 34; $\frac{7}{8}$ of 103?
8. Find every ninth and tenth part of 37.
9. How many cents in $\frac{2}{3}$, $\frac{5}{6}$, $\frac{3}{8}$, $\frac{5}{8}$, $\frac{7}{8}$, $\frac{2}{9}$, $\frac{5}{9}$, $\frac{7}{9}$, $\frac{8}{9}$ dollars?
10. How many in. in $\frac{2}{5}$, $\frac{4}{5}$, $\frac{3}{8}$, $\frac{5}{8}$, $\frac{7}{8}$ ft.?
11. How many oz. in $\frac{2}{3}$, $\frac{3}{5}$, $\frac{5}{6}$, $\frac{2}{9}$, $\frac{3}{10}$ lb.?
12. How many in. in $\frac{3}{5}$, $\frac{3}{8}$, $\frac{5}{8}$, $\frac{7}{8}$, $\frac{3}{10}$, $\frac{7}{10}$, $\frac{9}{10}$ yd?
13. How many pt. in $\frac{2}{3}$, $\frac{2}{5}$, $\frac{5}{6}$, $\frac{7}{9}$, $\frac{6}{10}$ gal.?
14. How many cents in 3, 5, 7, 9, 11, 13, 15 shillings?
15. $\frac{3}{4}$ of a debt of \$150 are paid. Find the amount paid in dollars.
16. How many lb. and oz. of flour have been taken from a barrel (196 lb.), which is still filled to $\frac{3}{5}$ of its capacity?

TABLES OF COINS, WEIGHTS, AND MEASURES.

I. United States Money.

10 mills (m.)	=	1 cent (ct.),
10 cents	=	1 dime (d.),
10 dimes	=	1 dollar ($),
10 dollars	=	1 eagle (E.).

II. Avoirdupois Weight.

16 drams (dr.)	=	1 ounce (oz.),
16 ounces	=	1 pound (lb.),
100 pounds	=	1 hundred-weight (cwt.),
20 hundred-weights	=	1 ton (T.).

III. Long Measure.

12 inches (in.)	=	1 foot (ft.),
3 feet	=	1 yard (yd.),
$5\frac{1}{2}$ yards	=	1 rod (rd.),
40 rods	=	1 furlong (fur.),
8 furlongs	=	1 mile (mi.).

IV. Cloth Measure.

4 quarters (qr.)	=	1 yard (yd.).

V. Liquid or Wine Measure.

4 gills (gi.)	=	1 pint (pt.),
2 pints	=	1 quart (qt.),
4 quarts	=	1 gallon (gal.).

VI. Dry Measure.

2 pints (pt.)	=	1 quart (qt.),
8 quarts	=	1 peck (pk.),
4 pecks	=	1 bushel (bu.).

TABLE AND EXPLANATION

OF

ABBREVIATIONS AND SIGNS.

A. stands for acre.
bar. or bbl. stands for barrel.
bu. stands for bushel.

C.	"	cord.
ch.	"	chaldron.
ct.	"	cent.
cwt.	"	hundred-weight.
d.	"	dime.
doz.	"	dozen.
dr.	"	dram.
E.	"	eagle.
ft.	"	foot.
fur.	"	furlong
gal.	"	gallon.
gi.	"	gill.
in.	"	inch.
lb.	"	pound.
m.	"	mill.
mi.	"	mile.
oz.	"	ounce.

pt. stands for pint.
pk. " peck.
qr. " quarter.
qt. " quart.
rd. " rod.
T. " ton.
yd. " yard.

@ signifies at.
$ " dollar.
+ " plus.
— " minus.
× " times.
÷ " divided by
= " equals.

ABBREVIATIONS AND

Date Due

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COMMON SCHOOLS OF NORTH
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